Amendments To The Claims:

1. **(Currently Amended):** A ~~Method~~ **method** ~~for the determination of the thickness of the insulation of a flat ribbon cable in the region of the metallic conductor paths, characterised in that~~ **to determine the cross-sectional geometry of a flat ribbon cable, the flat ribbon cable having a longitudinal direction, an upper and a lower side and two edges, each edge having a position, and the flat ribbon cable comprising an insulation (14) and a plurality of parallel, metallic conductor paths (12) within the insulation, each having a width and being spaced from the edges of the flat ribbon cable and from each other, the insulation having a first thickness above and a second thickness below each conductor path, and a third thickness beyond the conductor paths, comprising the steps of:**

irradiating one side of the flat ribbon cable ~~is irradiated~~ by means of an **x-ray source with an x-ray** beam **which stimulates an emission of X-ray luminescence radiation from the metallic conductor paths with a predetermined intensity;**~~, and~~

~~a detector on the same or on the opposing side of the flat ribbon cable measures the intensity of the x-ray luminescence radiation emitted by the respective conductor path, the detector being shielded against the x-ray radiation~~

shielding two detectors against the radiation of the x-ray source, one detector being provided on the same side of the flat ribbon cable as the x-ray source and the other detector being provided on the opposing side,

measuring the intensity of the x-ray luminescence radiation and determining the first and the second thickness of the insulation,

measuring the intensity of the x-ray radiation transmitted through the flat ribbon cable with a third detector placed on the opposing side of the flat ribbon cable as the x-ray

source, and

moving the x-ray beam and/or the third detector in a direction transverse to the longitudinal direction of the flat ribbon cable, so that the position of the edges of the cable and/or the spacings between each pair of adjacent conductor paths can be determined from the intensity measured by the third detector.

2. **(Currently Amended):** **The** ~~Method~~ **method** according to claim 1, ~~characterised in that the extension of the area of impingement of the x-ray beam on the flat ribbon cable transversely to the latter is small in relation to the width of the conductor path and the insulation between the conductor paths, and the x-ray beam is moved over the flat ribbon cable transversely to the longitudinal direction the flat ribbon cable~~ **further wherein the x-ray source produces a beam directed to an area of impingement with an extension of the area of impingement on the flat ribbon cable which is small transversely to the longitudinal direction of the flat ribbon cable in relation to the width of the conductor paths and to the spacing between the conductor paths, and in that the x-ray beam is moved over the flat ribbon cable transversely to the longitudinal direction of the flat ribbon cable**.

3. **(Currently Amended):** **The** ~~Method~~ **method** according to claim 2, ~~characterised in~~ further wherein ~~that~~ the x-ray beam is moved and the flat ribbon cable remains quasi stationary in the transverse direction, and the detectors ~~is~~ **are** moved with the x-ray beam.

4. **(Currently Amended):** **The** ~~Method~~ **method** according to claim 1, ~~characterised in that the x-ray beam is brought into focus transversely to the flat ribbon cable or is limited in its extension by means of a collimator.~~

further including the steps of directing the x-ray beam to an area of impingement with an extension of the area of impingement on the flat ribbon cable and wherein the x-ray is brought into focus in a direction transverse to the longitudinal direction of the flat ribbon cable, and

limiting the extension of the area of impingement by means of a collimator.

5. **(Currently Amended):** **The** ~~Method~~ method according to claim 1, ~~characterised in that the size of the sensitive area of the detector is a severalfold of the area of impingement of the x-ray beam on the flat ribbon cable.~~

further including the steps of:

providing each detector used to measure the x-ray luminescence radiation with a sensitive area, and

directing the x-ray beam to an area of impingement with an extension of the area of impingement on the flat ribbon cable, wherein the sensitive area of each detector is several fold of the area of impingement on the flat ribbon cable.

6. **(Cancelled):** Method according to claim 1, characterised in that the intensity of the x-ray radiation is measured on the opposing side of the flat ribbon cable with the aid of an x-ray detector.

7. **(Currently Amended):** **The** ~~Method~~ method according to claim ~~6~~ 1, ~~characterised in that the position of the edges of the flat ribbon cable is determined with the x-ray detector.~~

further including the step of determining the position of the side edges of the flat ribbon cable with the aid of a separate edge detector.

8. **(Currently Amended):** **The** ~~Method~~ **method** according to claim ~~6~~ 1, ~~characterised in that the position of the conductor paths in the flat ribbon cable is determined with the x-ray detector.~~

further including the step of determining the spacing between the edges of the flat ribbon cable and the conductor path nearest to the edge from a measurement of the x-ray radiation transmitted through the flat ribbon cable.

9. **(Currently Amended):** **The** ~~Method~~ **method** according to claim ~~6~~ 1, ~~characterised in that the thickness of the insulation between adjacent conductor paths and in the edge region of the flat ribbon cable, respectively, is determined with the aid of the x-ray detector.~~

further including the step of determining the thickness of the insulation beyond the conductor paths from a measurement of the x-ray radiation transmitted through the flat ribbon cable.

10. **(Currently Amended):** **The** ~~Method~~ **method** according to claim ~~6~~ 1, ~~characterised in that the total thickness of the flat ribbon cable is determined in the region of the conductor paths.~~

further including the step of determining the thickness of the flat ribbon cable in an area defined by a position of a conductor path, with this thickness being determined from a measurement of the x-ray radiation transmitted through the flat ribbon cable.

11. **(Currently Amended):** **The** ~~Method~~ **method** according to claim ~~6~~ 1, characterized in that the position of the side edges of the flat ribbon cable is determined with the aid of a separate edge detector.

12. **(Currently Amended):** ~~Device for the determination of the thickness of the insulation of a flat ribbon cable in the region of the metallic conductor paths, characterised in that an x-ray source (22) is provided, the x-ray beam (30) of which is directed to one side of the flat ribbon cable (10), a detector (26) sensitive for x-ray luminescence being disposed on the same and/or the opposing side of the flat ribbon cable (10), said detector being connected with an evaluation equipment for the evaluation of the intensity of the luminescence radiation.~~

A device to determine the cross-sectional geometry of a flat ribbon cable, the flat ribbon cable having a longitudinal direction, an upper and a lower side and two edges, each edge having a position, and the flat ribbon cable comprising an insulation (14) and a plurality of parallel, metallic conductor paths (12) within the insulation, each having a width and being spaced from the edges of the flat ribbon cable and from each other, the insulation having a first thickness above and a second thickness below each conductor path, and a third thickness beyond the conductor paths, comprising:

an x-ray source with an x-ray beam is provided on the opposing side of the upper side of the flat ribbon cable, which stimulates an emission of x-ray luminescence radiation from the metallic conductor paths with a predetermined intensity;

two detectors, shielded against the radiation of the x-ray source, one placed on the same side of the flat ribbon cable as the x-ray source and another one on the opposing side, which measure the intensity of the x ray luminescence radiation, so that the first and the second thickness of the insulation can be determined;

a third detector is provided on the opposing side of the flat ribbon cable as the x-ray

source which measures the intensity of the x-ray radiation transmitted through the flat ribbon cable, and

means are provided for moving the x ray beam and/or the third detector in a transverse direction to the longitudinal direction of the flat ribbon cable, so that the position of the edges of the cable and/or the spacings between each pair of adjacent conductor paths can be determined from the intensity measured by the third detector.

13. **(Currently Amended):** **The** ~~Device~~ **device** according to claim 12, characterised in that the detector (26) **is** sensitive for x-ray luminescence **and** is disposed on the same side of the flat ribbon cable as is the x-ray source and **further including** ~~that~~ a metallic plate or sheet (80) **which** is disposed on the opposing side of the flat ribbon cable.

14. **(Currently Amended):** **The** ~~Device~~ **device** according to claim 12, ~~characterised in that between the x-ray source (22) and the flat ribbon cable (10) means are provided for the generation of an x-ray beam (30) of small extension in the direction transverse to the flat ribbon cable (10).~~

characterized in that means are provided between the x-ray source and the flat ribbon cable so that a beam directed to an area of impingement is produced, with an extension of the area of impingement on the flat ribbon cable which is small transversely to the flat ribbon cable in relation to the width of the conductor paths and to the width of the insulating material between the conductor paths.

15. **(Currently Amended):** **The** ~~Device~~ **device** according to claim 14, ~~characterised in that the means are formed by a collimator or an equipment for bringing into focus the x-ray radiation.~~

characterized in that the means provided are formed by a collimator or by an equipment for bringing into focus the x-ray beam.

16. **(Currently Amended):** **The** ~~Device~~ **device** according to claim 12, ~~characterised in that the x-ray beam irradiates a larger area of the flat ribbon cable und that means are disposed between the flat ribbon cable and the detector through which the reception area of the detector, seen in the direction transverse to the flat ribbon cable, views only a small region of the flat ribbon cable at a time.~~

characterized in that the x-ray beam irradiates a larger area of the flat ribbon cable, each detector that can measure the x-ray luminescence radiation has a sensitive area, and means are provided between these detectors and the flat ribbon cable through which the sensitive area of each detector receives only such luminescence radiation which origins from a small area, oriented transversely to the longitudinal direction of the flat ribbon cable.

17. **(Currently Amended):** **The** ~~Device~~ **device** according to claim 12, ~~characterised in that a conveying equipment moves the flat ribbon cable (10) forward in a first direction and that a support (20) for the x-ray source (22) is moved transversely to the first direction in a second direction, and that a support for the detector is moved synchronously with the first support (20).~~

characterized in that a conveying equipment is provided which moves the flat ribbon cable forward in a first direction and that a support for the x-ray source is provided which moves transversely to the first direction in a second direction, and that a support for each detector is provided which moves synchronously with the support of the x-ray source.

18. **(Currently Amended):** **The** ~~Device~~ **device** according to claim 12, ~~characterised in that the x-ray source (22) and the detector (26) are attached to a common support (20), the x-ray beam and the detector (26) being formed such that the sensitive area of the detector (26) receives only such x-ray luminescence radiation which, seen in the direction transverse to the flat ribbon cable, origins from very narrow area portions of the flat ribbon cable at a time.~~

characterized in that the x-ray source and each detector that can measure the luminescence radiation are attached to a common support, each detector having a sensitive area, the x-ray beam and each detector being formed such that the sensitive area of each detector receives only such x-ray luminescence radiation which, seen in a direction transverse to the longitudinal direction of the flat ribbon cable, origins from very narrow area portions of the flat ribbon cable at a time.

19. **(Currently Amended):** **The** ~~Device~~ **device** according to claim 15, ~~characterised in that the collimator or the equipment for bringing into focus are formed such that the extension of the x-ray beam (30) in the longitudinal direction of the flat ribbon cable (10) is a severalfold larger than transversely to it.~~

wherein the x-ray beam has an area of impingement on the flat ribbon cable with an extension, characterized in that the collimator or the equipment for bringing into locus are formed such that the extension of the area of impingement in the longitudinal direction of the flat ribbon cable is several fold larger than transverse to it.

20. **(Cancelled)** Device according to claim 12, characterised in that an x-ray detector (24) is disposed on the side of the flat ribbon cable opposing the x-ray source (22), said detector being

connected with an evaluation equipment for the evaluation of the intensity of the x-ray radiation.

21. **(Currently Amended):** **The** ~~Device~~ device according to claim 20, ~~characterised in that the x-ray detector (24) has a point-shaped reception area in the scanning direction.~~

characterized in that the detector that can measure the x-ray radiation transmitted through the flat ribbon cable has a point-shaped reception area in a direction transversely to the longitudinal direction of the flat ribbon cable.

22. **(Currently Amended):** **The** ~~Device~~ device according to claim 20, ~~characterised in that the x-ray detector is a line sensor.~~

characterized in that the detector that can measure the x-ray radiation transmitted through the flat ribbon cable is a line sensor.

23. **(Currently Amended):** **The** ~~Device~~ device according to claim 12, characterised in that a separate edge detector is provided.

24. (New): A method to determine the cross-sectional geometry of a flat ribbon cable, the flat ribbon cable having a longitudinal direction, an upper and a lower side and two edges, each edge having a position, and the flat ribbon cable comprising an insulation (14) and a plurality of parallel, metallic conductor paths (12) within the insulation, each having a width and being spaced from the edges of the flat ribbon cable and from each other; the insulation having a first thickness above and a second thickness below each conductor path, and a third thickness beyond the conductor paths, comprising the steps of:

placing a metallic sheet adjacent a surface of the flat ribbon cable;

irradiating the flat ribbon cable and the metallic sheet with an x-ray source with an x-ray beam, which is placed on the opposing side of the flat ribbon cable as the metallic sheet, which stimulates an emission of x-ray luminescence radiation from the metallic conductor paths and from the metallic sheet with a predetermined intensity;

placing a detector, shielded against the radiation of the x-ray source, on the same side of the flat ribbon cable as the x-ray source;

measuring the intensity of the x-ray luminescence radiation, and

moving the x-ray beam and/or the detector in a direction transverse to the longitudinal direction of the flat ribbon cable, so that the first, second and/or third thickness of the insulation, the position of the edges of the cable and/or the spacings between each pair of adjacent conductor paths can be determined from the intensity measured by the detector.

25. (New): A device to determine the cross-sectional geometry of a flat ribbon cable, the flat ribbon cable having a longitudinal direction, an upper and a lower side and two edges, each edge having a position, and the flat ribbon cable comprising an insulation (14) and a plurality of parallel, metallic conductor paths (12) within the insulation, each having a width and being spaced from the edges of the flat ribbon cable and from each other, the insulation having a first thickness above and a second thickness below each conductor path, and a third thickness beyond the conductor paths, comprising:

a metallic sheet is provided, placed below or above the fiat ribbon cable,

an x-ray source with an x-ray beam is provided on the opposing side of the flat ribbon cable as the metallic sheet which irradiates the flat ribbon cable and the metallic sheet, thereby stimulating an emission of x-ray luminescence radiation from the metallic conductor paths and

from the metallic sheet with an intensity, a detector is provided, shielded against the irradiation of the x-ray source and placed on the same side of the flat ribbon cable as the x-ray source, which measures the intensity of the x-ray luminescence radiation, and

means are provided to move the x-ray beam and/or the detector in transverse direction to the longitudinal direction of the cable, so that the first or the second thickness as well as the third thickness of the insulation, and the position of the edges of the cable and/or the spacings between each pair of adjacent conductor paths can be determined from the intensity measured by the detector.